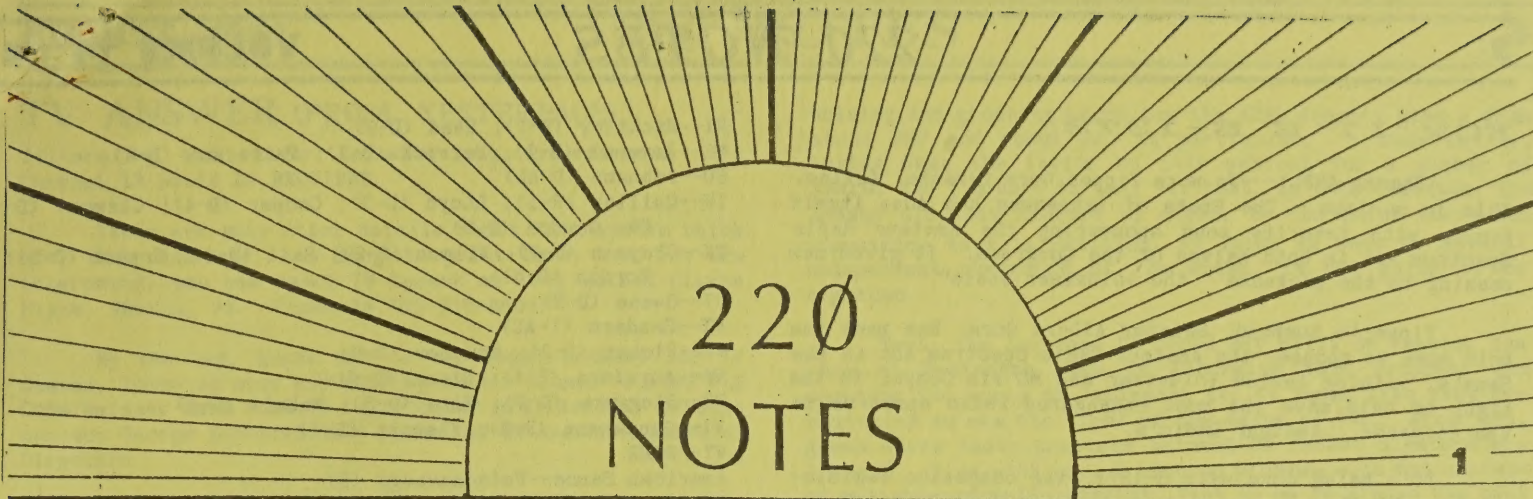




220 NOTES

1

The National 220 MHz Newsletter

VOLUME 14 #4

AUGUST, 1991

ARRL BOARD RATIFIES "INTERIM" 220MHz BAND PLAN; MAY PETITION FCC FOR NO FM BELOW 222.15

Minute 22, ARRL Board Meeting, July 20, 1990:

On motion of Mr. Kanode [N4NM], seconded by Mr. Harrison, it was VOTED that the League endorses and supports the efforts of local frequency coordinators to reaccommodate repeaters with input frequencies in the lower part of the 222 MHz band to other recognized repeater pairs, to reduce the possibility of interference between repeater users and operators using other modes for whom frequencies below 222 MHz will be no longer available after August 27; and further, that the band plan for 222-225 MHz as recommended by the VHF-UHF Advisory Committee is adopted as an interim plan, with the following changes and clarifications: 1) the term 'local option' is replaced by 'local coordinator's option', wherever it appears. 2) This band plan is intended to be a guideline to help avoid harmful interference between Amateurs having an equal right to operate and to pursue different operating interests. To the extent that band plans adopted through due process by local coordinators depart from this band plan, their plans should be respected in the geographical area to which they apply. 3) This interim plan is to be regarded as a step in an evolutionary process that may, and probably will, involve further adjustments. 4) Repeaters that cannot be reaccommodated higher in the band because of congestion, and that continue to operate in the part of the band now designated for other modes, are urged to adopt CTCSS and other means of reducing interference to their inputs. In some cases, time-sharing of certain frequencies may be necessary to accommodate differing needs. At all times, courtesy and mutual respect must guide our operating practices. (Mr. Frenaye requested to be recorded as voting against the motion.)

[220 NOTES has learned that the reason that Tom Frenaye voted against the plan is that he prefers the W1BJ band plan, as outlined in June 220 NOTES.]

The Board of Directors of the American Radio Relay League, in their meeting over the weekend of July 19-21, voted to institute an INTERIM National 220 MHz band plan as outlined above. Further, the Board, at the suggestion of the VUAC, has directed its counsel, Chris Imlay, N3AKD, to file a Petition with the FCC to remove FM operation from

the lowest 150 kHz of the 220 MHz band. That action is expected sometime in the not-too-distant future.

There is some opposition to that idea. At least one Board member contacted by 220 NOTES says that the move to petition the Commission for FM exclusion AT THIS TIME may prove what was termed "strategically damaging to other areas. There should be a lot more study on this situation before we move." When questioned further, the Board member pointed toward the possibility of damage to the recently-filed petition for access to certain frequencies in the 216-220 MHz. spectrum.

Even so, this petition is seen as a setback for the VHF Repeater Advisory Committee and its chairman, Karl Pagel, N6BVU, in his apparent efforts to make the Southern California Band plan, with its 10 kHz segment for weak signal operations a national standard. (see June 220 NOTES).

As one observer who talked to 220 NOTES on the condition of anonymity stated: "The fact that the Southern California people would allow 10 kHz for weak signal is greedy, covetous, a power grab, and any other term you want to use. And frankly, they are going to get their hands slapped because they didn't consider other people. You know, there's always a backlash on that." (SEE PAGE 9)

INSIDE: P.E.L.T.S. DIES, TV ANSWER LIVES
HR-73, SENATE VERSION; SOME TECHY STUFF
(REALLY!); GUEST EDITORIAL. AND MORE!

THIS MONTH'S TRIVIA:
HOW MANY APPLICATIONS
ARE ON FILE FOR THE
"UPS" 220-222 BAND?

a) 57,000 b) 75,000 c) 100,000

(Hint: The answer is in this month's Editorial, inside)

NOW IT'S S-1372

(Thanks ARRL)---No more Tipper Gore remarks, fellas. This is serious. The State of Tennessee has done itself proud, with favorite sons sponsering the Amateur Radio Spectrum Act in both halves of the Congress. It gives new meaning to the nickname "the volunteer state".

Tipper's husband, Senator Albert Gore, has made the bold move to sponser the Amateur Radio Spectrum Act in the Senate, joining fellow Volunteer and MC Jim Cooper in the fight to help save the most endangered radio spectrum in the universe... Amateur Radio's.

It's being done with S-1372, the companion legislation to HR-73, and the latter by this time has 115 co-sponsors (the list appears below, thanks to QST.)

PLEASE NOTE: 220 NOTES HAS LEARNED THAT FCC CHAIRMAN ALBERT SIKES HAS WRITTEN A LETTER TO CONGRESS EXPRESSING HIS UNQUALIFIED OPPOSITION TO THIS PAIR OF BILLS. NOW, MORE THAN EVER, WE NEED TO KEEP THE PRESSURE UP ON CONGRESS TO GET THE MAJORITY OF SENATORS AND REPRESENTATIVES TO SPONSER THIS LEGISLATION.

Here is the list of Congressman supporting HR-73 so far. Does yours appear on the list? [At the NOTES, Ye Editor's doesn't, Ye General Manager's does]

AL--Dickinson (R-2); Harris (D-7)
 AK--NONE
 AZ--NONE
 AR--Alexander (D-1); Hammerschmidt (R-3)
 CA--Riggs (R-1); Dellums (D-8); Stark (D-9); Doolittle (R-14); Lagomarsino (R-19); Gallego (R-21); Dixon (D-28); Dornan (R-38); Cox (R-40); Packard (R-43)
 CO--NONE
 CT--Kennelly (D-1); Gejdenson (D-2); Shays (R-4)
 DE--NONE
 FL--Hutto (D-1); Stearns (R-6); Lewis (R-12); Johnston (D-14)
 GA--Thomas (D-1); Hatcher (D-2); Jones (D-4); Jenkins (D-9)
 HI--NONE
 ID--NONE
 IL--Russo (D-3); Lipinski (D-5); Porter (R-10); Fawell (R-13); Hastert (R-14); Evans (D-17); Durbin (D-20)
 IN--Long (D-4); Jontz (D-5); Burton (R-6); McCloskey (D-8); Jacobs (D-10)
 IA--Nagle (D-3); Grandy (R-6)
 KS--Roberts (R-1); SLattery (D-2)
 KY--Hubbard (D-1)
 LA--Tausin (D-3); Hayes (D-7)
 ME--Snowe (R-2)
 MD--Gilchrest (R-1); McMillen (D-4); Mfume (D-7); Morella (R-8)
 MA--Studds (D-10)
 MI--Camp (R-10); Bonior (D-12)
 MS--NONE
 MO--Emerson (R-6); Volkmer (D-8)
 MT--Williams (D-1)
 NE--NONE
 NV--NONE
 NH--Zeliff (R-1); Swett (D-2)
 NJ--Pallone (D-3); Dwyer (D-6); Roe (D-8); Gallo (R-11)
 NM--NONE
 NY--Hochbrueckner (D-1); Scheuer (D-8); Towns (D-11); Fish (R-21); Solomon (R-24); Horton (R-29); LaFalce (D-32)
 NC--Jones (D-1); Valentine (D-2); Lancaster (D-3); Price (D-4); Neal (D-5); Rose (D-7); Hefner (D-8); Taylor (R-11)
 ND--NONE
 OH--Regula (R-16); Traficant (D-17)
 OK--Synar (D-2)
 OR--Smith (R-2); DeFazio (D-4); Kopetski (D-5)
 PA--Murtha (D-12); Clinger (R-23)

RI--Machtley (R-1); Reed (D-2)
 SC--Ravenel (R-1); Derrick (D-3); Patterson (D-4)
 SD--Johnson (D-AL)
 TN--Quillan (R-1); LLOYD (D-3); Cooper (D-4); Clemon (D-5); Gordon (D-6)
 TX--Chapman (D-1); Wilson (D-2); Hall (D-4); Bryant (D-5); Bordon (D-6)
 UT--Owens (D-2)
 VT--Sanders (I-AL)
 VA--Pickett (D-2); Boucher (D-9)
 WA--Morrison (R-4); Dicks (D-6)
 WV--Staggers (D-2); Wise (D-3); Rahall (D-4)
 WI--Gunderson (R-3); Kleczka (D-4)
 WY--NONE
 American Samoa--Faleomavaega (D)
 PR--Fuster (D)

IF YOUR REPRESENTATIVE'S NAME IS NOT ON THIS LIST, IT IS TIME TO WRITE THEM AND DEMAND SUPPORT FOR THIS BILL. IF YOUR REPRESENTATIVE IS ALREADY A SUPPORTER, WRITE HIM OR HER ANYWAY AND THANK THEM FOR THEIR SUPPORT OF AMATEUR RADIO.

PELTS DIES

(Thanks ARRL, FCC Publicity Dept.)--The FCC has terminated WITHOUT ACTION the proceeding on Docket 89-599, which was opened in late 1989 to establish a personal emergency locator transmitter service, or PELTS.

Quoting the FCC News Release: In light of the comments received in response to its rulemaking notice, the Commission has declined to amend its rules to establish such a service.

This is of particular interest to Amateur Radio in the US because the new service had been proposed for the 220 MHz band. The comments filed were quite negative, including those from search and rescue organizations.

Again quoting the FCC News Release: There was a feeling that the technical requirements of the narrowband technology required would make the equipment too costly to be practical. There was also unwillingness by existing search and rescue organizations to perform the critical monitoring functions that would be required.

The ARRL had opposed the Commission's proposal, on the basis that even if such a service were desirable, the idea of introducing it at 220 MHz was flawed in several respects.

The Commission said that while it continued to believe that there was a need to improve emergency communications capability in remote areas, there were enough problems with the PELTS system that it would terminate the proceeding and release the channels involved for the private land mobile [industry].

The Commission action terminating the proceeding was adopted July 31, and announced on August 2.

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TV ANSWER (ETAL) TO GET ITS CHANCE

(Thanks FCTN, Electronic Engineering Times)--TV Answer (remember them?) may get their "interactive video and data service" after all. A pair of channels for their 'service' are proposed, both in the 218-218.5 MHz region, which TV Answer says "will bring millions of viewers back to television." Base stations would transmit with from 1 to 20 watts ERP depending on the proximity to the nearest TV Channel 13. Home units would run a maximum 20 watts of ERP into a 'rubber duckie'-type antenna. Installation of free

(NEXT PAGE)

TV ANSWER (FROM YESTERPAGE)

filters by the vendor to alleviate interference with Channel 13 would be REQUIRED.

There are many other details about this system which are, unfortunately, too long to print here, but you are interested, you can reach TV Answer at 1941 Roland Clarke Place, Reston, VA. Phone is 703-715-8600.

By the way, guess who is the legal counsel for TV Answer, lobbying over and over again the cause: former FCC Commissioner Mark Fowler. And former presidential science advisor George Keyworth is a member of TV Answer's Board of Directors.

Need we say more?

REISPIECES Editorial by K9XI

I wonder just how much the Amateur Radio Community realizes what it might be getting with the advent of the limited access to 216-220 MHz, an area which in effect is land mobile turf.

That is exactly what the League is aiming for in their Petition to the FCC this past June. The idea is audacious, visionary, and deserves the support of every ham, no matter what his or her niche in this service.

I remember back in the days when the 87-14 thing was just getting started, and the word came back from a number of quarters that we hams should start filing Petitions with the Commission to turn land mobile frequencies over to the hams. Even the most stalwart of the proponents of that idea had to admit that it didn't have a snowball's chance in hell. Yet, in a much more limited way, that is the sort of thing the League is proposing now.

A quick look through the Petition should be enough to convince even the toughest cynic among us that the League really did its homework this time around, hiring the independent and well-respected outside firm Atlantic Research to handle the technical aspects of this filing.

This effort on the part of the League effectively sent out two messages. The first message, aimed at the Commission, Watercom and other users of 216-220, the Association of Maximum Service Telecasters and the National Association of Broadcasters, is that the Amateurs of this country are willing to prove that our operation in frequency spectra near television frequencies can be structured so as not to cause undue interference to any of the other operations in the either the geographic or spectral area. The League is expressing for us a willingness to coordinate such operation to ensure that Amateur secondary operation in what are basically non-Amateur bands will work.

The second and third messages are aimed at the Amateur Community itself. One message is that, in this Petition for rule making, we have an opportunity to expand our spectrum in a very unique and creative way. Thanks to packet and voice repeater networks (which is, in my assessment, the next growth mode in Amateur Radio), the growth of the need for fixed point-to-point operations is very real. Our present bands are crowded to the point where it is very difficult to find room to put these modes. How much better it would be if the Amateur Service had frequency spectra set aside in OTHER USERS spectra for the purpose? Is this a gift horse or what? And doesn't this leave more room in our primary allocated bands for our more non-fixed, traditional uses?

The other message is aimed at the professional "League Bashers" out there. I get sick and tired of the

whining and groaning about how the ARRL doesn't give a damn about VHF and about 220 in particular. I know better, having seen the inside on this subject for a number of years, and I'm here to tell you that, in this instance, the League did this concept up right, to the point where the opposition to this Petition, at least as seen by several independent observers of the scene, is not going to be vigorous.

Yeah, the low-band DX crowd may still be running the show at Newington, but in endorsing this proposal and spending the money to implement it, it looks like they are beginning to see the light of the value of VHF. After all, guess where their precious beloved DX Packet clusters are located. Fine with me. I have no problem with the concept of enlightened self-interest. That to me is always the best kind. I'd rather see us as all being in this together than to see the factional infighting which tends to hurt out efforts with the FCC.

Now, how about those within the ARS who consider that the only bounds we should have are the FCC-mandated band-edges and our own in-house gentlemen's agreements, and that to operate with any mode, on any ham frequency, primary and secondary, is our inalienable right? To all of you who feel that way, I say this:

We have a choice here, and I truly believe that it will profoundly affect the future of the ARS. If we of the Amateur Community support this proposal for 216-220 MHz, WITH ITS LIMITATIONS, we may be looking at a very good way of increasing our primary spectrum space at a limited expense to other services. Yes, it will require some cross-service coordination, but it can work with some effort. After all, our history of relative calm (relative to the land mobile industry, that is) in handling our coordination matters may teach those other 'services' something about spectrum cooperation.

If, on the other hand, we take on a petulant "all or nothing at all" attitude in this matter, I truly believe that we will be shooting ourselves in the foot. I think I can say categorically that in that event, we will be sending another message to the Commission: That we are too immature to be allowed this opportunity, and that maybe we should have all the spectrum we have in the first place.

I don't care what you think of the ARRL in general. This time is the time to acknowledge that the League DOES have the best interests of Amateur Radio at heart, and support this Petition for 216-220 MHz.

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It's pity party time, and with it another idea whose time has come....maybe.

Pity poor UPS. Here they go to the FCC and become the major instrument by which the 220-222 MHz band is removed from the Amateur Service, and what happens? They get one lottery chip out of 57,500, (that's right, there have been 57,500 applications for licenses for the band, AS OF LATE JUNE, WHEN THIS WAS WRITTEN. AS WE GO TO PRESS IN EARLY AUGUST, WE'VE RECEIVED WORD THAT THE FCC HAS FROZEN ANY NEW APPLICATIONS, WITH THE NUMBER REACHING 100,00!!!) and thus UPS has virtually no chance of gaining any access to 220-222 MHz at all. Tsk, tsk. Poor babies...

Want to hear another one? OK. TV Answer gets what amounts to a green light to go onto 218 to 218.5 MHz, and what happens? The Commission opens the door to competing companies to do the same thing. In other words, TV Answer had been counting on a total market monopoly of their flimsy technology, and now the FCC tells them they can't have it! Former FCC Chairman Dick Wiley is the counsel for,

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TV ANSWER (FROM PREVIOUS PAGE)

TV Answer, and he is LIVID about this. He can't seem to understand how his influence could possibly have fallen short. Tsk, tsk. Poor baby.....

An aside: I'm predicting that this TV Answer technology and the way it was assigned spectrum is SO bogus that when the public learns the truth about it, the company will dry up and blow away, almost as Watercom did.

After all, if you were the public, and you knew that, sitting on the top of your TV set you had a 218 MHz (the height of many children is about as long as a wavelength at that frequency, right?) 50 watt transmitter with a cute little child-attractive rubber duck antenna attached, all within a couple of feet of your kids watching TV, and if you knew that that little 50 watt box was on top of a TV set which was trying to receive TV Channel 13, the sound carrier for which was a mere 3 MHz away, would you buy it? For that matter, where is AMST and NAB when they're supposed to be yelling about this?

The point to all this is a proposal from within the FCC entitled "The Pioneer Technology Preference Proposal". I wish I had more info on this at the time I write this (mid-July), but I got a lot of this second-hand from some very reliable sources.

This one is the brain child of FCC Chairman Sikes. Simply put, if you invent a new way to use the spectrum, or a new way to more efficiently use the spectrum, then you will be given some frequencies, somewhere in the spectrum, by the Commission, for your exclusive use in working out or marketing that technology.

The ramifications of such a proposal are incredible. Spectrum use as an incentive is a powerful way for the creative among us in the US to capture more of the world's technology lead. As such, the idea is great.

Now, here's the \$64 question: Where is this "reward" spectrum coming from? Do you see NOW why we need HR-73 more than ever? With the OET having a say in this spectrum thing, you bet your bippy they'll be looking at Amateur Spectrum to fill the bill.

But wait. Isn't this competition also open to HAMS as well? What if someone from among OUR ranks invents and implements a new technology for the electromagnetic spectrum? What if it's developed in ham radio, as packet was. Might not WE get some new spectrum with which to develop our ideas? Yes, this whole concept is a two-edged sword, as I see it now, and I'll continue to look into this new development to see what is in it for us and for 220 MHz.

Oh, yes, about UPS. They went screaming to the Commission that they deserved 220-222 MHz on the basis of the ACSSB concept that they were to put onto "their" new band, back in 1989. Problem is, Alfred Sikes wasn't the Chairman at the time UPS filed, and thus there was no "Pioneer Technology Preference Proposal" then. And there are no retroactive laws. Right? If UPS had waited just a couple of years.....

Poor babies.

GUEST EDITORIAL: AMATEUR RADIO DESERVES FEDERAL PROTECTION

Don Bishop
Editor, Mobile Radio Technology

Congress has before it a bill introduced by Rep. Jim

Cooper (D-TN) that would prevent further loss of radio spectrum now allocated to the Amateur Radio Service. This bill should be passed.

Personal Spectrum Use

Individuals make personal use of radio spectrum in the United States via what the FCC calls the personal radio services, the Amateur Radio Service, the General Mobile Radio Service, and the Citizens Band Radio Service. Almost any other personal use of the radio spectrum requires paying someone for the service, such as a specialized mobile radio (SMR) system operator or a cellular mobile telephone system operator.

The profit to be made by developing the radio spectrum and selling access to it drives a commercial engine that delivers products, services, and jobs. Commercial spectrum development supports industrial productivity and America's ability to compete worldwide. The benefits of commercial spectrum development cannot be denied.

Personal access to radio spectrum through the Amateur Radio Service delivers benefits, too. Emergency communications services provided by radio Amateurs improve public safety, protect property and saves lives. Radio Amateurs have an admirable record of providing emergency communications services in connection with floods, tornados, forest fires, blizzards, train wrecks, chemical spills and other disasters.

Personal access to radio spectrum leads individuals into careers where they can pioneer and sustain developments to keep the United States a world leader in telecommunications. The value of the Amateur Radio Service in attracting bright young minds into telecommunications is incalculable. It would be easy to recite the names of telecommunications pioneers whose lifetime pursuits were shaped by early involvement in Amateur Radio.

Personal access to radio spectrum offers recreational opportunities, too. In that respect and in several others, radio spectrum resembles real estate. Location, quantity and use determine its value.

Spectrum Conservation

Congress has seen fit to conserve real estate for personal recreational use in a system of national parks, monuments, and historic sites. It should do the same for radio spectrum.

Although commercial development of real estate brings myriad benefits, commercial development of ALL U.S. real estate would change the beauty and appeal of public lands. It would deny many individuals access to recreational opportunities now available through protected parks, forests, and seashores. Congressional protection of national parks seems strong enough to withstand requests for commercial development.

Radio spectrum devoted for personal use needs similar congressional protection. Beginning in the early 1900's, personal access to the radio spectrum through the Amateur Radio Service has had to be defended time and time again. Since 1934, most spectrum reallocation requests have been decided by the FCC. Increasingly, the FCC has chipped away at personal access to radio spectrum in favor of commercial development.

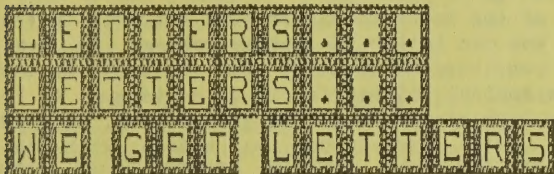
The Amateur Radio Spectrum Protection Act of 1991, which Rep. Cooper introduced as HR 73, would ensure that individuals who make personal use of radio spectrum through the Amateur Radio Service can continue to use all of the
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GUEST EDITORIAL (FROM PREVIOUS PAGE)

frequencies they now use. If the FCC proposes to reallocate the spectrum for other purposes, the bill would require that amateur frequencies lost in the process be replaced by equivalent spectrum.

A letter to your congressional representatives can help to protect personal use of the radio spectrum via Amateur Radio Service allocations. The bill deserves your support, and Amateur Radio spectrum deserves Federal protection.

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LINE A ON 220?

Hello, Art!

A few years back the Canadian Government reallocated 4290-430 MHz for land mobile use. We U.S. Amateurs north of "Line A" lost use of this band due to our treaty with Canada. Is it sitting idle here? No. It's slowly being filled up with U.S. land mobile, and all Amateur Operation is prohibited within 100 miles of Detroit, Cleveland, and Buffalo. No Ham "save the band" rally cries here.

Now I read where the Canadian DOC wants to take all 220-225 MHz for land mobile. Silence from the Ham Community. Are we Amateurs along the Canadian border to lose all of 220 because of incompatibility and the treaty regardless of our "exclusive" assignment at 222-225 MHz? How do we protect our 222-225 band from the Canadian government?

---John Thomas, AB8Z
Parma, Ohio

[First of all, this is actually the last half of a letter, the rest of which will be published in the October 220 NOTES. The questions which John raises are excellent. There is nothing we can do about the Canadian government from this side of the border, but if and when the DOC acts, and if that act negatively involves the 222-225 MHz band, then it is time for US here in the U.S. to fight this one tooth and nail, especially with Congress. Remember, there is still HR-73 and its Senate Counterpart, S-1372. Is there any other reason to push for the passage of both?

--216---217---218---219---220---221---222---223---224---225---

WILL 222-225 MHz BE NEXT?

Dear Art:

There seems to be a mad scramble underway to devise the perfect new band plan for what is left of the 225 MHz Amateur band. Let's make sure that we adopt a worst case plan to protect as many repeaters as possible and let the areas that do not need all the repeater channels re-assign them to other services.

Some people want to give the non-FM guys up to 1 MHz of the remaining space. Let's not forget why we lost 220-222 MHz. If we do not show some usage of all that is left we will lose more frequencies. We in the Northeast have repeaters coordinated down to 223.60 MHz. My Northeast

area data base has 74 repeaters coordinated below 224.00 MHz. All of these would have to find a new home. Let's start the repeaters output at the Novice edge, 223.72, and give the CW and SSB users the lower 100 kHz. The total CW and SSB population in the Northwest could operate in this space without any interference. Just look at the 1990 VHF contest results. The winner, W2SZ/1, made only 160 QSO's on 220 MHz in 2 days.

Let your coordination council know how you feel on this subject so they can spread the word.

---Chan Eaton, W1IFL
Sudbury, MA
New England Spectrum Management Council
220 MHz Coordinator

EDITOR'S NOTE: We don't have the space in this issue, but we have for you in the October issue three DANDY letters on the subject of 220 MHz band plans. Such luminaries as Mark Gilmore, WB6RHQ of the Condor Connection, and Hal Dietz, WA9VNY, Mr. 220 in Oklahoma, as well as the aforementioned John Thomas AB8Z, will be along to add fuel to the fire. Want to make your cogent, non-flame thoughts on the issue a part of the record? Deadline for entries into our little debate is

SEPTEMBER 15.

VINEYARD

Dear Walt:

The Vineyard Amateur Radio Association is about three years old now, and started as a result of a number of hams on Martha's Vineyard Island off the coast of Cape Cod. We wanted to promote the 220 band and put a 220 repeater on the air. The repeater has been on the air for about two years and is on the highest point of land on the island. Hams from Southeastern Massachusetts and most of Rhode Island can use the machine. We plan on having Novice Classes again this fall and hope to have novice nets on the repeater. It's on 223.72 and the call of KB1QL.

Thanks for a great publication!

---Brad Fligor KB1QL
Edgartown, Mass.

HELP!

Do you know of anyone that has converted an HA-2 to 220 MHz, or of any publication that has a conversion written up and what month it was in?

I recently acquired one such rig, complete with power supply, at a hamfest for only \$25. I thought I might try to put it on 220. Keep up the good work on 220 NOTES.

---Don Moth, W2NPK
Chittenango, New York

[Don, I don't have any such conversion here in the annals of the NOTES, but if anyone ELSE does, then the place to find out is at didah Publishing, P.O. Box 7368, Nashua, New Hampshire 03060-7368. Rich has EVERYTHING in the way of listings of articles from all ham magazines ever printed. If anyone has that info, he does.

That failing, many 220 MHz hams are more technically inclined, and tend to 'roll their own when it comes to doing their own modifications. Is there anyone out there in 220 NOTES land who can help?

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TECHNOTES (FROM YESTERPAGE)

By the way, Jeff has told 220 NOTES that if HE has to be the one to invent that modification, that he'll certainly have it printed somewhere, most likely within future pages of this rag.

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KLM 14-ELEMENT ANTENNAS ON 222 MHz

While on the subject of modifications, I asked Jeff Gopldmann K3DUA what kind of antennas he used on 220, and he told me that he uses the KLM 14 element beams with the four driven elements. I asked him if he intended to modify them for use on 222 rather than 220 and he mentioned that actually he'd be UNmodifying them.

When he bought the KLM's, Jeff swept them for input impedance vs frequency, and found that they resonated at close to 222 MHz already. A trip to the hardware store and some #8 machine bolts later, and Jeff had an antenna that matched best at 220 MHz. The secret was to screw the #8 bolts into the ends of the driven elements and adjust them for about a quarter inch length on each side. That solved that problem, but now Jeff is hauling the antenna down and will remove the bolts for proper operation at 222.

FABRICATIONS GUIDE FOR VHF/UHF BALUNS

---J. Edward Pearson, KF4JU

Originally appeared in the KCOV VHF-PLUS UPDATE

This article is intended to provide the Amateur with construction details in fabricating the bead balun presented by W. Maxwell in "Some Aspects of the Balun Problems, which appeared in QST in March, 1983. It is recommended that this article be read in detail to gain an understanding and appreciation for this clever device. This 1:1 balun is especially suited for balanced feeds on VHF/UHF yagi antennas. It is inserted at the feed point between the coax and a balanced driven element. The balun is independent of frequency and therefore should be useful on all bands from 6 meters though 23 cm (1296) using the same bead material.

This method of construction was selected for the availability of materials and the water tight features inherent in this approach. After fabrication of your first balun you will undoubtedly find new variations of the assembly technique and are encouraged to experiment.

Drawings of the various sections of the balun are included and should be referred to during the following description. Also, a bill of materials for the necessary components is provided. RG-223 coax was selected because of the it has two silver coated braids and an oversized silver coated copper center conductor. High power operation will benefit from this selection. In a pinch RG-58 can be used. A source for the RG-223 is given in the bill of materials.

INSTRUCTIONS

1. Take the 12" piece of RG-223 coax and install the connector on one end using the assembly data associated with the particular connector. If you are lucky enough to find a bulkhead mounted female "F" cable connector go back to the supplier and buy some more. Otherwise the non-bulkhead version is acceptable.

2. Take the 1-1/2" piece of heat-shrink tubing (HST) that fits over the end of the connector and slide it on so that it covers the retaining nut. Shrink the HST using a good heat gun intended for this kind of use.

3. Try sliding a 1" piece of 1/4" HST halfway over the previously shrunk piece. If not possible, use a piece of 3/8" HST, shrink, then use the 1/4" piece. A staircase appearance will result, but weatherproofing is accomplished.

4. Take the assembly and remove 8" of the outside insulation from the other end by cutting around the cable with a sharp knife, slitting lengthwise to the end. Carefully remove the insulation.

5. Slide the 8-1/2" piece of 3/16" HST over the bare braid and up over 1/2" of the original coax insulation. The HST should be flush with the cable end. Shrink, starting at the connector end.

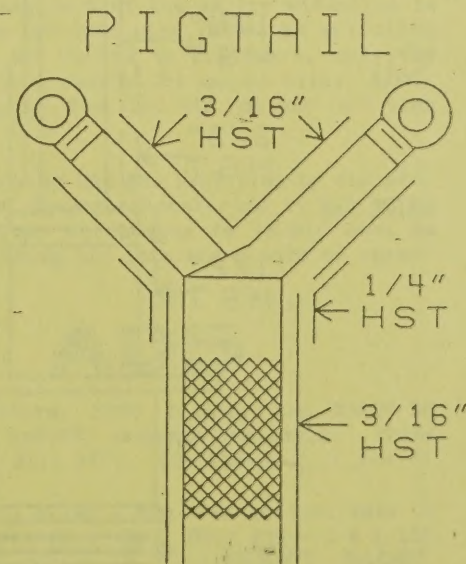
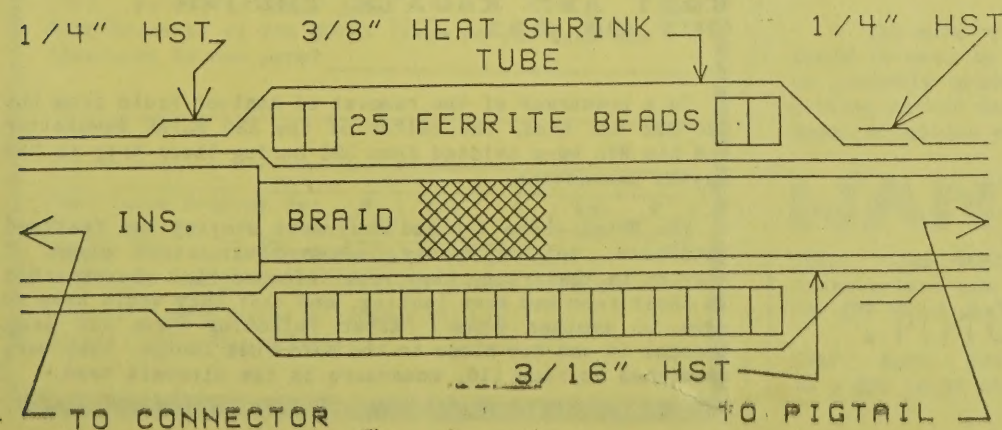
6. Take one of the 1" pieces of 1/4" HST and slide it on the cable up to the previously installed connector.

7. Now slide on the 25 ferrite beads until they touch the shoulder at the end of the original insulation.

8. Lightly flare the end of the 6" piece of the 3/8" HST and slip it over the first bead. Continue until the HST covers all of the beads and is positioned so that the excess amount is equally distributed at each end. Pressing lightly will reveal the bead position under the heat shrink.

(NEXT PAGE)

BEAD-BALUN ASSEMBLY



VHF/UHF BALUNS (FROM YESTERPAGE)

9. Shrink the 3/8" piece, being careful not to touch the previously installed 1" piece of 1/4" tube. If you goof here you're in trouble. Allow the 3/8" tube to cool.

10. Carefully slide this 1/4" piece up over the end of the 3/8" piece about half way. Now, shrink this piece.

11. Take the remaining 1" piece of 1/4" HST and slide it halfway over the outer and of the 3/8" piece and shrink. About 2" of the braided and should remain for the pigtail.

12. Remove enough of the 3/16" HST to provide the pigtail length needed. Carefully unravel the double braid back to the HST. Twist the braid together and cover with a 2" piece of 3/16" HST, but leave enough braid exposed at the end for a solder-type ring connector.

13. Strip enough insulation off the inner conductor to allow for a solder-type ring connector. Slide the last 2" of 3/16" HST over the center conductor and shrink both this piece and the one previously installed over the braid.

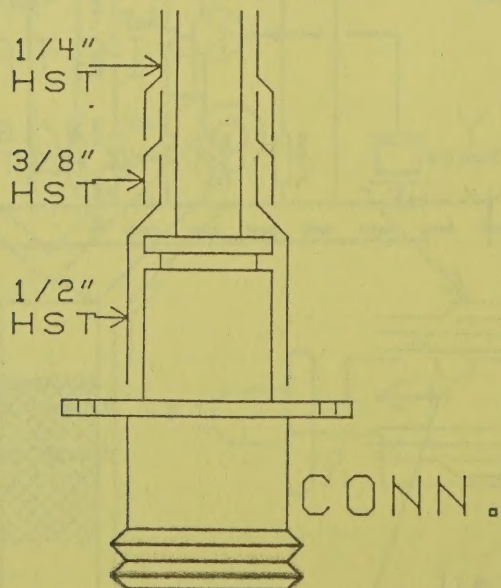
14. Slide the 1/2" piece of 1/4" HST over the squeezed-together center wire and braid and position so that it is centered over the point where the pigtail starts. This will help relieve some of the tension at the split and become part of the weather seal at that point.

15. Install, crimp, and solder the two ring connectors at the very end of the wire only. This keeps the braid from wicking up too much excess solder and therefore provides flexibility at the emerging end. This completes the fabrication of the bead balun and only the weatherproofing remains.

16. Carefully wipe around each of the HST piece ends with the PVC cement, especially at the split area of the pigtail. This will provide a hermetically sealed balun assembly. The assembly is now ready for mounting at the antenna.

BILL OF MATERIALS FOR THE BALUN

- RG-223 Coax, 12", from Nemaal and others.
- Connector, N-female, bulkhead, UG-1095A
- Ferrite Beads, FB43-2401, 25 required, from Amidon or Radio Kit.



---Heat Shrink Tubing, of good quality:

- 2 each, 3/16" x 2"
- 1 each, 3/16" x 8 1/2"
- 1 each, 1/4" x 1/2"
- 3 each, 1/4" x 1"
- 1 each, 3/8" x 1"
- 1 each, 3/8" x 6"
- 1 each 1/2" x 1-1/2" (for large body connectors)

---PVC pipe cement, small container.

Note: Check QST, CQ, etc., for addresses of above mentioned suppliers, and other for parts sources.

DAYTON NOTEBOOK

-----220-----221-----222-----223-----224-----225-----

One of our subscribers, who wishes to remain anonymous but who is also a government employee near Washington, dropped by the 220 NOTES booth to let us know that his superiors have told him that he is no longer to comment on issues before the FCC from the Amateur Radio point of view. The questions are: Does the Commission have the right to do that?; that is, prevent a staff member from expressing their rights of free speech in commenting on public issues? (Yes, as it turns out, thanks to Civil Service Rules), and Would the Commission have done the same thing if Gary's comments came down on the side of the land mobile industry? (Most likely not, since the land mobile industry IS the party "line" there, of course....)

-----220-----221-----222-----223-----224-----225-----

Pickings of 220 gear in the flea market at Dayton continued its slim pace of past years, with one major exception. Some fellow there had for sale two IC3AT's, two BP-5's a speaker mike and a desk charger for all of \$200. A friend of ours found this tasty little bargain, and General Manager Walt went running for it. Several previous flea marketeers had been trying to talk the seller down from his asking price, but as soon as Walt showed up to pay what the seller asked, the rest of the hams around the sellers space started talking the price up to \$250 and even \$300 for the complete set of goodies! Somewhere in there there's a lesson.

-----220-----221-----222-----223-----224-----225-----

Tony, K2SG, told us at the 220 NOTES booth that as a worker in County government in New Jersey he received a solicitation from the coordinators of frequencies in New Jersey. Advising them that 220-222 frequencies were available for the taking.....Tony is suggesting that they give the band back to the hams....

-----220-----221-----222-----223-----224-----225-----

K9XI AND KA9ATS THROWN OUT OF 221...

In a precursor of the removal of Amateur Radio from the 220-222 MHz band, the Editor of the 220 NOTES Newsletter and his MYL were evicted from 221 during their trip to the Dayton Hamvention.

The Motel where Art and Suzy were staying had featured waterbeds, but on Friday, after their first night of staying in that room, they were informed that the waterbed in their room had been leaking, and that they would have to move to another room. After rejecting room 226 area because it was too close to the hard-rock lounge, they were consigned to room 116, somewhere in the aircraft band.

(NEXT PAGE)

ROOM 221 (FROM YESTERPAGE)

Please note that the motel later rented the room vacated by K9XI and KA9ATS to a couple of high school prom teenagers for approximately four-hour use the next night, for purposes only the land mobile industry could guess. We know that because Hap Holly KC9RP and his MYL Stephanie KA9WKD, were in Room 222 for the entire weekend. (Those walls were THIN there!)

This is not made up. It all actually happened, and the name of the motel is available on request. But the parallels here between this story and other events of our readers' experience are too many to let go by.

220 EQUIPMENT NEWS

Kenwood has just announced a three band FM transceiver, the TM-741A, in which the first two bands are their choice, (2 meters and 440 MHz) but the last band is YOUR choice, including 220 MHz! (Additionally, you can get 6 or ten meters, or 1200 MHz).

You can also have crossband repeating, from either one or two bands to the third, complete with offset functions to allow you to repeat to repeaters. There are also a detachable front panel, 101 memories per band, and individual volume and squelch controls for each band. All

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sorts of tone and DTMF features and accessories are available.

The basic two-band unit is list priced at \$850. The 220 module (and most of the others) are listed at \$300. Type acceptance is pending as of the time of the press release.

-----220-----221-----222-----223-----224-----225-----

Hy Gain is discontinuing the V-3 220 MHz base station antenna due to low sales. The original 2 meter model V2S antennas are convertible to a V-3 just by cutting them down to size, since the coils were identical. However, the newer V2R (a ruggedized version) is not so easily modified. You need to modify the coil itself to bring the input impedance up to 50 ohms. Hy Gain's lab worked on that for a little bit, but gave up for other projects. Sounds more like a ham radio weekend project anyway.

Note, However, the new V2R coil, unlike the sealed coil in the V2S, is of open construction, which recommends itself to some modification. Anyone want to try and put this thing together, and send the howto to the NOTES? We'll make it worth your while. (Thanks WBODGF)

WEAK SIGNAL NOTES

Though its been this long since we've put out an edition, this story is still somewhat dated. We understand from Westlink that Bob Cerasulo, WA6IJZ, Editor/Publisher of one of the last of the independent VHF Publications, The West Coast VHFer, had suffered a stroke a March. He should be home by now, and could probably stand a nice card or note from folks. According to the Callbook, his address is P.O. Box 685, Holbrook, Arizona, 86025.

We don't yet know the extent of the effects of the stroke on him or whether he will be able to resume publication of his newsletter anytime soon. With the demise of all the other publications in the VHF field the loss of The West Coast VHFer will impact on this part of the Amateur Service greatly.

EDITORIAL NOTE: WE HAVE COME OUT
AGAINST THE ARRL PETITION FOR NO FM ON THE BOTTOM
150 kHz OF 220. FOR STRATEGIC REASONS. MORE NEXT ISSUE.

ARRL 220 BAND PLAN (FROM P. 1)

The most bewildering part of the entire situation is that, while input on the 220 band plan issue was solicited from everyone involved for review by the board, only the VHF-UHF Advisory Committee, chaired by Lauren Libby, KX00, provided any serious input. The VRAC did not put in a plan at all.

The move to the interim 220 MHz Band plan by the ARRL Board is seen by several observers contacted by 220 NOTES as probably prudent, since the League is lately seen as getting rather weary of being put into the middle of inter-modal squabbles on VHF.

WANT ADS

SELL: -Two 4CX250 linears, 8930 linear, two MM220-28 transverters adn three GaAsFET preamps available. trade for 432 kW or whatever. Bill AG7V. 608-756-3001. [14/4-6]

SWAP: Annt - 220/50 MHz, w/120 W amp [We believe this to be a 220 to 50 MHz transverter. Ed]. SWAP FOR - 6 & 2 150
(NEXT PAGE)

WANTADS (FROM PREVIOUS PAGE)

W solid state amps, 10 W drive. John Butrovich, III, W5UWB, P. O. Box 260298, Corpus Christi, TX 78426-0298.

SELL: Midland 13-509 with both TX and RX PL, Drake 1525 Mike with TT Pad, and 12 Pair Crystals; Antenna Specialist "Through the Glass" antenna; Kenwood TH-31AT with PL, Kenwood lapel Spkr-Mic, and two battery packs; Daiwa CN-465M SWR meter; MJF-812B field strength meter; all for \$400. Earl Poulson, NB9V, 22 Elmwood Dr., Inidan Head Park, Ill. 60525. 708-246-6226. [Does not say, but we understand that this package may not be separable. Ed.] [14/4-6]

SELL: Complete 220 repeater/remote base system. ACC RC-850 controller. Vacom Duplexor, GLB preselector/preamp, 2 meter remote base, 450 remote base, 10 meter remote base, Astron Power Supply, 6 foot locking cabinet, antennas for all bands. Working system just removed from service. \$3500. Contact Mark Gilmore WB6RHQ 805-529-5581. [14/3-5]

WANTED: 220 rig for a BBS port. Does not have to be synthesized or fancy, just needs to hear real well. Please

contact Jon Sills, WV9E, RR #1, Box 367, Angola, Indiana, 46703, or via WV9E BBS [14/3-5]

WANTED: Crystal Controlled 220 Rig. Will consider low priced synthesised one as well.

ALSO: Need an IC3-AT as well. Give asking Price in First Letter. Mike Zyara, Jr., KV1M, 92 Palmer Ave., Stamford, CT., 06902-5310. [14/2-4]

SELL: I have the following crystals for sale. They are all for the Midland 13-509 type radio:

223.18/224.78 - two pairs

223.38/224.94 - two pairs

222.10/223.70

222.46/224.06

222.38/223.98.

for more info send reply to Bob Boehm, N8EXF, 6821 Le Conte Ave., Cincinnati, OH 45230 or @ KC8TW BBS. [14/2-4]

WANTED: Midland 13-509 or Clegg FM 76 220 rig for repeater. Please reply to Barret VE4ABA @ VE4KV.#WPG.NB.CAN.NA or 204 - 338-2441 after 00 hours GMT. [14/2-4]

WANTED: Kenwood TM-631 50/25w 2m/220 mobile rig. Am interested in the 631 or older model in good condition. Please send reply to: Jay W. Smith (N5RHJ) 1931 Deane Apt R, Fayetteville, AR 72703. Phone: (501) 444-0231. Via Packet: N5RHJ @KA5BML.AR.USA [14/2-4]

WANTED: 220 Handie-Takie or Mobile rig. Frank Denk Jr. KA9J, 96 Abbeywood Dr. Romeoville, Illinois 60411-1111. You can contact me on the AF9M.IL.USA.NA BBS or by mail.

220 NOTES

Established December, 1977, by Lee Knirko, W9MOL, and Julian Jablin, W9IVI.

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and Rich Motill (no call yet)

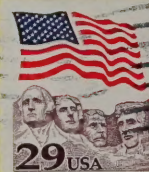
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220 NOTES

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FIRST CLASS

(Thanks W1UED)---It seemed for awhile that the 220 Mhz Novice band had been extended to the entire band. It appears that way from the publication in the Federal Register of the final report and order on General Docket 87-14. However, that erratum has been caught, so, sorry Novices.